726 202 539 good clubbing. In reply to further questions, the [Southern] messenger told them that his leader wanted the people in five days, for the [Northern] messenger would return in five days and again in seven days. Some of the warriors were very happy; they promised that the people would arrive at the proposed time.

The [Southern] messenger returned to his leader and reported that he had been successful in persuading the [Tinlinin] people to come in five days. [After five days] the people arrived at the leader's house. The warriors immediately began inquiring who their opponents were and when the fight was to take place. They were told that the Northerners were their opponents and that the seventh day had been chosen for the battle.

The Northern messenger also arrived on the fifth day. He reported that he did not have much news: his people would come to fight on the seventh day. The [Bankalachi] leader said that his people were ready and asked where the tribes would meet. He was told that the place was Chiteetiknawahsiw (tsiti·tiknawa·siw, literally "sliding-place, place where one makes oneself slide"; according to my informant, this place is situated near Deer Creek).

The day of their departure arrived. The [Southern] people went to Gayliw (gayliw, literally "waiting-place, meeting-place," identified as "Lookout Mountain" by my informant), from where they could see other people coming. They then descended to the plains and fought there. [411] They used only arrows and obsidian (tsa·sip), with which they pierced each other. Half of the Northerners were wiped out, and some of them ran away. Some of the Bankalachi were killed too. Some of those who had run away went far to the west and reported to the Tachi. A Chunut messenger told the Tachi that the Northerners had been wiped out by the Southerners.

The Tachi leader immediately sent his messenger to Tabsa. After receiving Tabsa's greetings, the [Tachi] messenger told him that, according to reports, the Wukchamni had been wiped out by the Southerners. Tabsa assured the messenger that he would leave with his people in two days. After the two days had elapsed, Tabsa went to the Tachi. He asked the Chunut messenger, who was still there, what had happened. The messenger told him that his people had fought and had been badly beaten. Tabsa then hurried him off to gather whatever Chunut warriors remained and to bring them back immediately. The messenger returned home and told the warriors that their allies were speeding preparations to fight the next day. The Chunut joined Tabsa, who again asked for information about their battle with the Southerners. They told him that half of their people had been killed. Tabsa decided that they had better fight the following day. The Chunut messenger offered to carry the news to their enemies, for he knew where they were. Tabsa told him to go immediately.

The [Chunut] messenger journeyed all night, and the next morning he reached the enemies' camp, where he was greeted. He told them that the Tachi had joined his people and asked if they knew of Tabsa; they replied that they did know of him. It was agreed that they would fight the next day in the plains. The messen-

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
 Tubatulabal NS22

T Y 534 known. The clapper (tawa´tw:l) and cocoon rattle (sa´nač) were used. The musical bow was known to the Southern Yokuts, Choinimni Yokuts, and probably northward throughout the foothills as it is reported from Western Mono, Miwok, and Maidu. [131]

T Y 224 411 Hunting.---F.M.'s father was a fine hunter; Cougar was his dream helper. When F.M. was about fifteen years old, his father took him hunting. Sinew-backed bows were bought from Pitanisha (Tübatulabal) living near Kernville. But plain bows of elderwood [? he claimed] were made at Sototlo. Arrows were of button willow tipped with a white-oak point, or of obsidian if for deer.

T Y 224 The deer disguise was made of the complete head, antlers, and skin. The head was stuffed with grass. The wearer leaned on two sticks to imitate the animal, and with them would crash about in underbrush to simulate fighting deer.

Bears were lured out of their caves by a fast runner, and shot by two or three good hunters waiting in ambush.

After the killing of an especially large deer or bear, the animal's head was sprinkled with eagle down. F.M. never heard of selling bear paws or skin to someone with a bear totem. He thinks bear was not a totem animal for any one at Sototlo.

In dividing up a carcass, the man who took the skin did not receive any meat. Men did tanning of hides.

T Y 223 The pigeon booth from which birds were snared is probably native to this region, as well as northward along the foothills, although that seen and illustrated by Holmes was on the Tule River Reservation.[132]

T Y 276 Tobacco.---Tobacco (so´gon) was drunk with lime. The preparation was like that elsewhere: the cakes of dried leaves were pounded with a small mortar (koi´wes) and pestle (pa´lwi), crushed shells (ta´sap) were added, and water was stirred in. It was taken in the evening by persons of either sex who were at least twenty years of age; the purpose was to aid dreaming. Crushed tobacco was smoked in a cane pipe (ha´la) or an elderwood pipe (wi´se´ta, elderwood). Tobacco was made in the usual two cake forms, so´gon and politsi´na, but of the latter F.M. could only say that it was stronger and molded in the usual cylindrical shape.

T Y 372 Tinder.---Oak balls contained a shreddy, corklike substance called ye´ska, which was used as tinder in making fires and lighting pipes.

T Y 278 757 Medicine.---Redwood sap (ta´nal) was shaved up in a pot of hot water. A person with a wound which bled profusely steamed himself with this under a blanket; a woman who had given birth also used it in this way. A little of

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[131] Ibid., 419, 542; Barrett and Gifford, 250; Wobemuch Western Mono, herein, Pt. II.

[132] Anthropological Studies, pls. 31, 32.

224 hind crotch to the chin. The skin was turned inside out as it was worked off and the antlers 281 removed with it. For the costume, the cut under the throat was sewed up and the head and neck stuffed with shredded tule; the head rested on the man's head, the skin hanging down his back, said S.G. J.B.'s assertion that the hunter looked out through the eye-holes, with the skin tied under his chin, does not sound practical. The bow and arrows were tied [411] to the body with a belt, in such a way that the weapons pushed the skin up at the back making a more natural appearance. The hunter leaned 224 on two short sticks to assist the four-legged pose as he walked. These he cracked together to suggest fighting deer. With the disguise a man could approach within twenty feet of grazing animals. If one deer fell victim to the silent arrow shot, others ran up to investigate and were killed also.

Three men would engage in a deer drive, two to scare up the deer and one to kill by waiting in ambush on the deer trail.

S.G. has never heard of "charming" [276] animals, or of smoking oneself and weapons. J.P. said hunters gathered to eat tobacco and lime and to vomit the night before hunting. They rose early, bathed, ate only acorn gruel, and departed in the morning. The only tabu was on saying where one was going, "if you told, you would never see any deer." Neither has he heard of any quarrels over hunting territory or claims on special places since game was so plentiful "nobody cared where anybody else went." Not every hunter was skillful enough to get deer, but a hunter would often take another man along to help him, and this man received [262] some meat in return. S.G. believes that everybody ate deer meat, but some people do not like bear meat. J.B. said he did not eat cougar flesh although many people did.

136 J.P. said "there were five animals just like deer, everybody ate them" (i.e., they were [262] not totemic). These were: ʔo·ʔkoi, elk, wandered east of the swamps in the valley; soi·ʔyod, a goat with straight horns, belongs in the valley, seen near the foothills at Hadi·ʔdɨt; duwe·ʔsɨp, mountain sheep, had curved horns and belonged in the mountains; wo·ʔkno, antelope, in the foothill valleys, especially in Antelope Valley (Local Map B, no. 13); and hoi, deer.

224 Bear hunting.---Bears were not ordinarily shot at in the open, and were rarely sought as game. The meat was not eaten by many people, and the animal was held in considerable awe. When deliberately sought to be killed, the creature was roused during hibernation, forced to run out into the open, and shot from ambush. The skin, paws, or claws were redeemed by members of the Bear lineage, certain members of which would use these parts in the Bear Dance. As an illustration of the hunting method and its attendant dangers, J.P. told the following:

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773 Holo'anši, J.P.'s maternal grandfather [great uncle ?] was a very fine hunter and was frequently out with his weapons. One morning he saw a bear with two cubs; he went home and told his friends about it. The next morning twelve men, each with bow and arrows, started for the bear's cave.

"Who is going to run?" they said. Holo'anši offered to as he was a good runner, but another man wanted to, too: they argued a bit. Meanwhile the others arranged a semi-circle of stakes, driving them into the ground in front of the cave. They took up shooting positions behind these. Holo'anši went to the cave entrance to lure the bear, but the bear rushed at him before he could draw his bow. He was forced to run toward the circle of stakes with the bear clawing at his heels. The second runner jumped in to draw the bear's attention, and another man succeeded in shooting her in the shoulder. She continued to pursue the second runner. Holo'anši dashed in the cave to grab the cubs, but the mother saw him and went after him. Now, Lizard was the dream helper of Holo'anši and he came to his rescue. He gave that man power to climb right up the side of the cave and whisk up and out of the entrance just out of the bear's grasp. But outside Holo'anši was forced to run, and the bear still chased him. Holo'anši tried to climb a high rock pile but at that moment the bear caught him, clawing and biting him. The other men were all too frightened to do anything, save the second runner who came up and shot the bear three times as she turned toward her cave again.

The men carried Holo'anši back to camp. They put his eyes back and all his skin in place. They covered him entirely with eagle down and dosed him with jimsonweed. He began to get better at once, but some bad doctor saw that this was his chance to do away with Holo'anši. He shot "poison" at him, and the old man died the next day.

411
322 Weapons---The plain bow (ta'dup) and sinew-backed bow (tap) were used by the Wukchumni. S.G. claimed that both were made of elderwood (wuse'ta). He said few men knew how to make a sinew-backed bow, but any man could and did make the plain kind -- as follows. When the length had been chosen and cut, and the bark peeled off, the stick was set with one end in a crotch and the other end pulled until it split down its entire length. If it split properly, two bows could be made from the two halves. Thereafter shaping was done with a large obsidian blade. No grip was cut on the plain bow. To aid flexibility occasional gashes were cut on the inside curve, which was the bark side of the wood, i.e., the core of the wood was on the outside. The bow was heated over glowing coals and pulled around the knee to form the center curve. The end re-curvature, which was slight in the plain bow, was made by fixing the end in a vicelike crotch and pulling it until the desired effect was obtained. The shaping progressed bit by bit and was not accomplished in less than three to six days.

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322 Of the ten plain Yokuts bows in the Museum of Anthropology, University of California, four still have the bark on the inner side. None shows much recurving, and they are no doubt the basis for Kroeber's comment that Yokuts "common bows for small game were little more than a shaped stick...."[172] Plain bows had strings of čidᵊk twine.

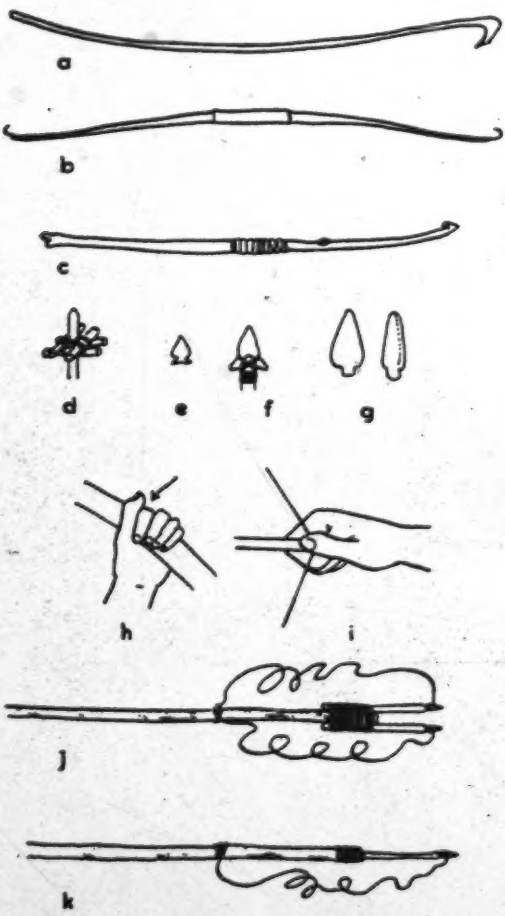

Fig. 10. Hunting and fishing equipment. a, rodent hook. b, sinew-backed bow (about 4 feet). c, self-bow (about 3 feet, unstrung). d, bird-arrow tip. e, obsidian tip of deer arrow. f, same showing fastening. g, flint tip of war arrow. h, bow grasp with arrow rest. i, arrow release. j, k, double and single harpoons.

[172] Handbook, 530.

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[P. 739]

411
322 As the best instrument of this group, No. 1-3943 was selected for description. It measures 3 feet, 7-3/4 inches in over-all length and is 1-3/8 inches in width at center. The bow curvature is slight, and only one end is now recurved. The ends differ, one having a projection to carry the permanent fastening of the bowstring, the other hooked (fig. 10, c), the string being hooked and unhooked over this end. This weapon differed from the others of the group in having a hand grasp 7-1/2 inches wide of skin thong wound around the bow at the center. The wrappings were exactly parallel, touching but never overlapping. The wrapping was started by laying one end along the outside and returning the wrapping over this end. On the back about 6 inches above the grasp was [237] glued a red-headed woodpecker's scalp. It is possible that this was a hunter's talisman.

The sinew-backed bow (fig. 10, b) was doubtless made of mountain cedar [juniper] as [439] Kroeber states, as was true for the neighboring Mono from whom, in fact, most Yokuts bows were obtained.[173] The sinew used was that taken from the long back muscles of deer; it was fastened to the back of the bow with glue made of boiled deer brains. The string was of sinew (pik·t).

Kroeber states:

> The commonest type [of bow], primarily for the hunt, was nearly as long as a man, of about two fingers' width and the thickness of one. The ends were recurved, probably through a curling back of the thickened sinew. Bows made specifically for fighting were shorter, broader, and flatter, and pinched in the middle. Except for being unpainted and probably not quite so extreme in form, this type appears to have been the same as the northern California one.[174]

Powers describes Yokuts bows as he saw them.[175]

> As to their implements and weapons, there [439] are some interesting particulars to be noted. Here, as everywhere on the Sacramento and Joaquin plains, the Indians make no bows [sic--no sinew-backed bows], but purchase them all from the mountaineers. This is because they have no cedar. This wood is extremely brittle when dry, and is then the poorest possible material for bows; but by anointing it every day with deer's marrow while it is drying the Indian overcomes this quality and renders it the best. The bow is taken from the white or sap wood, the outside of the tree being also the outside of the bow. It is scraped and polished down with wonderful painstaking, so that it may bend evenly, and the ends are generally carved so as to point back slightly.

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[173] A description of making the sinew-backed bow is in the Wobonuch section, Pt. II.

[174] Handbook, 530.

[175] P. 373.

1: Gayton E-5 (1926-1930) 1948 N529 Yokuts N529
[P. 736]

411 Then the Indian takes a quantity of deer's
237 sinew, splits it up with flint into small
322 fibers, and glues them on the outside or flat back of the weapon until it becomes semi-cylindrical in shape. These strings of sinew, being lapped around the end of the bow and doubled back a little way, impart to it its wonderful strength and elasticity. The glue is made by boiling the joints of various animals and combining the product with pitch.

I saw a bow thus carefully made in the hands of an aged chief and it was truly a magnificent weapon. It was about five feet long, smooth and shining -- for when it becomes a little soiled the fastidious savage scrapes it slightly with flint, then anoints it afresh with marrow -- and of such great strength that it would require a giant to bend it in battle. For lack of skins the owner carried it in a calico case. The string, composed of twisted sinew, was probably equal in strength to a sea-grass rope of three times its diameter. When not used the bow was unstrung, and the string tied around the left limb of the bow, and to prevent the slightest lesion of either the bow or the string the former had a section of fur from some animal's tail, about four inches long, slipped onto it.

411 Arrows (toi´yuš) according to S.G., were
237 about 2 feet long for deer, a bit less than 2 feet for bear-killing, as not more than 2 inches of the arrow extended beyond the bow when it was drawn. For small game a 4-foot, one-piece, arrow of willow (kai´wan) was used. The cane arrow (si´ked) had a foreshaft of oak sprout, which, when shaped to a point, was ground down on a rock and then heated over coals for hardening. Deer arrows were of cane with an obsidian tip (fig. 10, e, f) on the foreshaft. All arrows had three feathers, preferably "squirrel" hawk (ño´hup) wing feathers. The top of each split feather was fastened first, each one being inserted under a separate turn of the binding sinew. When the bottoms of the feathers were fastened down, they were laid a trifle out of line to give a slight spiraling of the feathers, "to make the arrow fly straight." The feathers had to be left wing feathers, as only one half of each feather was used, and these were always laid on with the "right side" (outside) toward the worker.[176] S.G. did not know how the obsidian
[438] points were made. He says a natural obsidian was obtained from the lake people: if his statement is correct they must, in turn, have gotten it from Coast Range people.

411 Arrows were kept in a quiver made of a
237 whole fox skin with fur left on. It was called a´oja timai´ya (fox sack) and was hung on the right shoulder.

Of Yaudanchi arrows Kroeber states:[177]

[176] I neglected to inquire if a left-handed arrowmaker used right wing feathers which, it seems, would be required. Possibly such a man would insert the feathers with the wrong side toward himself.

[177] Handbook, 530.

411
237 The arrow, shikid, generically, had three forms among the Yaudanchi, known as t'uyosh, djibaku, and wuk'ud. The war arrow had no foreshaft, but a rather long wooden point, notched. It measured from the finger tip nearly to the opposite shoulder or a trifle more than the possible pull of the bow.... The ordinary hunting arrow had a long sharpened foreshaft, but no real head. The deer arrow had foreshaft and flint head, but the foreshaft was socketed without glue or tie, so that the main shaft would disengage after hitting.

Powers saw two types of arrows:[178]

411
[824] Of arrows, the Indians living on the plains made some for themselves of button-willow, straight twigs of the buckeye, and canes, but the most durable came from the mountains. There are two kinds, war-arrows and game-arrows; the former furnished with flint heads, the latter not. The shaft of the war-arrow consists of a single piece, but that of the game-arrow is frequently composed of three pieces, furnished with sockets so adjusted as to fit into each other snugly. When the hunter, [224] lurking behind the covert, sees the quarry approaching, he measures quickly with his eye the probable length of shot he will have to make, and if it is a long one he couches his arrow with three pieces; but if a short one, with extraordinary quickness he twitches it apart, takes out the middle section, claps the two end sections together again, and fires. An arrow made of what we should call the frailest of all woods, the tender shoot of a buckeye, and pointed with flint, has carried death to many a savage in battle. I have seen an Indian couch a game-arrow, which was pointed only with a section of arrow-wood, and drive it a full half-inch into the hardest oak!

411
324 The arrow straightener used by all Yokuts has been described and illustrated by Kroeber:[179]

The prevailing arrow straightener among the Yokuts is the Southern California form: a well-shaped rectangular block of stone, often rounded or ridged on top, and invariably with a polished transverse groove. This implement is undoubtedly associated with the employment of
411 cane for arrows: the Yokuts are known to have
322 used the plant, though not exclusively. The joints were warmed in the groove and bent by hand or on the ridge after the stone had been heated; the groove was also used for smoothing. The holed straightener of wood or horn for
[171] wooden shafts, as employed all over northern California, has not been reported from the Yokuts.[180]

Cane arrows were realigned before and after each usage. The cane shaft, with foreshaft removed, was grasped at each end and drawn across the hot groove with a rolling,

[178] p. 374.

[179] Handbook, 530, pl. 49, c.

[180] Latta (Uncle Jeff's Story, 20) recently reports that a perforated stone disc was so used by the Chainimni. A.H.G.

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29

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[P. 74b]

pushing motion. Willow arrows were straightened by the same method.

223 Bird hunting.---Kroeber attributes the
349 pigeon booth to the Yaudanchi and describes a similar method by which they captured eagles.[181]

The hunter lay in a concealed hut of brush. He did not look at his quarry until it was caught, fearing that it flee his glance. Outside were placed a stuffed animal skin as bait and a live hawk as decoy. The trap was a noose fastened to a bent-over pole sprung from a trigger. Before the eagle was killed by being trod on, it was addressed: "Do not think I shall harm you. You will have a new body. Now turn your head to the north and lie flat!" Only men who knew this prayer and the necessary observances undertook to kill eagles.

223 The Wukchumni went up the Kaweah River into Patwisha territory to get wild pigeons (šo''owɨn). They had their own booths up there. They took with them house mats for temporary shelter, and these they sold to the Patwisha when returning.

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349
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Fig. 11. Wukchumni hunting and fishing blind. a, log float. b, end view. c, sewn tule screens in place.

9. [181]Handbook, 529, 524, pl. 46.

264 Meals were irregular, save for a late afternoon supper just before sundown. Snacks were taken by workers as they came home from tasks away from the village. Mayfield claimed all persons ate from a central basket by dipping in three fingers, but used small baskets for drinking.

227 Traps and weapons.--The fish trap was a cone-shaped net of milkweed fibre. Its round mouth gaped in a weir facing upstream; the fish were driven downstream into it. In shallow pools fish were caught by wading in and pouncing an open-bottomed basket over them; they were then extracted by putting a hand through the opening.

A double-pointed harpoon, one tip of which was detachable, is described by Mayfield; the pole handles were often 20 feet long. A scaffolding was constructed to spear the fish from: two poles, crossed like shears, were set butt down in deep water 10 to 15 feet from the bank, the crotch about level with the land. In this crotch were lashed the tips of two long poles whose ends rested on the bank and were some 10 feet apart. Across this frame were laid poles and leafy branches, amongst which the fisherman lay face down. As he could see fish in the shady water below, he speared them through an opening between the poles.

● 411 Mayfield, when a lad, was given a fine sinew-backed bow. This was about 3-1/2 feet long, wide, flat, with handgrip in center and recurved ends, and was "painted in pretty [283] colors." The string was of sinew, tied at one end and looped at the nocked end, which was unfastened when not in use. These bows were all [439] bought from the Monachi by the Choinimni and [463] taken back to them for repairs, in fact, to a certain skilled individual north of Sycamore Creek.

The Choinimnis' own simple bows were without recurved ends.

411 Excellent details of hunting, of the making of weapons, etc., are given by Mayfield
224 in a passage too long to reproduce here. The essential points are: arrow release with two fingers, three fingers for heavy bow; arrows with obsidian-tipped foreshaft for warfare and heavy game, hardwood foreshaft for light game; simple arrow for practice; bird-arrow tipped with four cross-pieces; foxskin quiver; the pigeon booth (see Michahai below); and the deer disguise. Deer and elk were snared, but the method is not described.

291 Clothing.--The man's breechclout was ten inches wide, cut from a full length of deerhide, held in place by a buckskin thong over which the clout was doubled at the back and over which the two front ends hung in a flap. Women wore a "rabbit skirt woven together like the blankets." This consisted of two knee-length aprons, the larger one in front. Cougar skins were worn about the shoulders in cold weather. Mayfield claims footgear was unknown.

DBD

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529
[P. 153 9] Dumna

131 The type of country in which the Northern
175 Foothill Yokuts dwelt was praised by Major Savage. He described it as land of the "Chow-chillas," but in recent times Western Mono have occupied the area and may have then.

131 This belt of country [Sandhill Crane
136 Valley on North Fork of the San Joaquin] beats
175 the region of the Yosemite or the Po-ho-no Meadows for game, if the Indians tell the truth; and with the exception of the Kern River Country, it is the best south of the Tuolumne River. It abounds in grizzly and cinnamon bears, and there are some black bears Deer are very plenty, and a good variety of crane, grouse, quail, pigeons, road-runners, squirrels and rabbits -- besides, in their season, water fowl. This territory of the Chow-chillas has
137 plenty of black acorns (their favorite acorn),
175 and besides this there are plenty of other supplies of bulbous roots.[37]

SHELTER, FOOD, IMPLEMENTS

343 Structures.---There were six different sweat houses (mos) at B.W.'s Dumna village; they were of different ages and sizes, two of them in disrepair.[38] When a new sweat house
[574] was completed, a "fandango" was given by the chief. B.W. could not describe this, save that there was "plenty to eat and everybody had a good time. Then they could sweat."

342 The houses (sa´mɨs), large and spherical, were covered with "brush" thatch, not tule.

Foods and beverages.---Pine nuts (pa´san)
222 were obtained on trips up to the mountains or
262 were brought down for trade by the Kechayi. The pine cone and pine tree were called ton; pasan also meant the split pine cone.

Manzanita cider (a´pču) was made of the
252 ripe berries which were mashed and freed of
272 their seeds. The pulp was put in water for several hours, then the liquid was strained through a basket sieve. A hot tealike drink (či´tɨl) was made by pouring hot water on the pulp; the pulp, with a little water, was eaten as a "mush" and called ča´pi. A thickening material called ča´nɨt was pounded up and added sometimes [čanɨt not identified].

Implements.---The plain bow (miko´n) was
● 411 made of pine, but was gotten by trade from the Kechayi or Posgisa, as was also the sinew-backed bow (piki´l). All kinds [sic] of arrows were called tuyo´s.

412 A knife for scraping was made from the rib bones of a deer or any other large animal.

For fishing, a hook (mike´) was made of
227 "some piece of bone which was boiled to make it soft and then it was bent." This was used on a string for angling [European introduction ?].
[262] Small fish eaten were: polhu´i, (sucker), wɨsča´ (lamprey eel), and lu´pɨč (brook trout).

[37] Quoted, ibid., 116.

[38] "Too old to be any good, just like I am now," said B.W.

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529
[P. 190 9] Chuckchansi

412 322 ment. -- A.H.G.] The plastic material for the handle was taken from another uncooked root.

Soaproot was used to wash the hair, head, 515 baskets, etc., said J.R. (Since skin clothing hardened when wet, it was not washed.) The root, when pounded, exuded a soapy juice which was then mixed with water as a washing fluid which lathered. The fibres were saved for brushes. J.R. added that, when the bulb was [262 252 171] roasted, it was "just like roasting potatoes." [The inference is that some varieties of soaproot were pit-cooked and eaten as by other Yokuts, Miwok, Pomo, etc. -- A.H.G.]

415 322 Mushstirrers were made of green chaparral [Ceanothus?], heated and bent into shape, tied with milkweed string at the neck of the loop and at the ends of the handle. Total length, as seen by Thrall, a bit over two feet. A pair of straight sticks some four feet long were used like tongs on hot cooking stones.

415 324 Cooking stones were made of soapstone, said N.W.; she called these pako'yun or halix. They were heated and dropped in acorn mush to cook it. Plain stones broke when so used and "spoiled the food."

Soapstone dishes (approximately 6 in. in diameter, 2 in. deep, with walls 1 in. thick) were made by the Chukchansi. They were used [412 322] for cooking larvae and worms.[110]

Wooden mortars were known to the Chukchansi, says Kroeber.[111]

323 The absence of pottery agrees with previous findings of Kroeber and Gayton.[112]

● 411 Weapons.---Plain and sinew-backed bows were made by Chukchansi (and Miwok). The sinew-backed bow was of cedar, about three feet long. Deer sinew from each side of the backbone, about 18 inches long, was glued on the back of [237] the bow. The sinews had been kept dried for this purpose. Once on the bow, it was never permitted to get wet. The bowstring was always sinew. Nevertheless, the bow was kept outside the house, according to J.R., but always unstrung when not in use. This type of bow was for hunting large game -- deer, bear, cougar, coyote, wildcat -- and for warfare.

A plain bow of mountain willow, four feet long and strung with a milkweed string, was used for everyday shooting of squirrels, gophers, rabbits, and birds. The informant J.R. maintained that the same type of arrow was used with either bow. [Doubtless the same arrow could be used, but it is unlikely that only one arrow type was used. Moreover, the flat bird arrow is mentioned in a Chukchansi myth. -- A.H.G.]

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[110] Cf. Kroeber, Handbook, 527.

[111] Ibid., 528.

[112] Ibid., 537; Gayton, Yokuts and Western Mono Pottery-Making.

1: Gayton E-5 (1925-1930) 1948 MS29 Yokuts MS29
[P. 190 b] Chuckchansi

411 Arrows were of an unidentified wood.[113] For the sinew-backed bow they were about two feet, six inches in length. Three split feathers were fastened on with wet sinew; these were slightly spiraled to make the flight straight.

The same type of bow and arrow was used for fighting as for hunting, said J.R. "You can't shoot very far with an arrow; it doesn't go straight. You have to shoot high, let it come down on the target. They can shoot farther but can't kill anything if it is very far off."

[324] The recorder saw four arrowheads at the Wyatt's place. These were called flint, but Thrall thinks they were of obsidian.

Four Chukchansi arrows in the Peabody Museum (specs. 76475) are of cane with inserted foreshafts. Their dimensions are: (1) shaft, 26-1/2 in. plus 5-in. foreshaft; (2) shaft, 29-1/2 in. plus 7-in. foreshaft; (3) shaft, 30 in. plus 7-in. foreshaft; (4) shaft, 30-1/2 in. plus 7-in. foreshaft. Sinew wrappings on forward ends where foreshafts are inserted measured: (1) 1-1/4 in., (2) 1-1/4 in., (3) 1-1/2 in., (4) 1-1/2 in. Three vanes of feathers, not spiraled, on each arrow are trimmed straight off at the butt ends. They ride free from the arrowshaft except for the binding at each end; their free lengths are: (1) 2-1/2 in., (2) 2-1/2 in., (3) 3 in., (4) 3 in. All the shafts are 3/8 in. in diameter.

MISCELLANEOUS DATA

501 Boats and weirs.---There were no boats or rafts for crossing rivers. Only in play would boys sometimes get logs, roll them in the water, and ride downstream on them.

227 In Chukchansi territory Powers saw fish weirs with inserted traps into which fish were driven from upstream by means of a brush sweep similar to that of the Wobonuch (fig. 3, b); see below. They also speared fish from a booth over the water like that described by Mayfield for the Choinimni.[114]

436 Money.---Several kinds of beads were shown 321 Miss Thrall by N.W. and C.D. who said they were "grave beads" and named them as follows. The descriptions are Miss Thrall's.

Supna: cylindrical white bead, 1/4-in. long, same diameter, small hole through center. Said to be cut from a larger bead about an inch long. One bead (long or short?) was worth a

[824]

[113] From a bush which grows beside creeks, is something like willow, but has a nearly round serrated leaf. The wood is straight and tough. It is not common, just a few bushes grow near J.R.'s place. It grows about 8 feet tall "like an elderberry."

[114] Powers, Tribes of California, 376.

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529
[P.218b] Western Mono N525

terms Michahai]. S.O. could recall only two specific patterns and the generally used shamans' pattern. A man with Crow totem would always use black, but this might be arranged any way he chose, S.O. thought. The favorite pattern for a Crow pošam was a horizontal black band on each cheek under the eyes, or sometimes over the eyes. A Deer man's emblem was one to three rows of black dots drawn along the zygomatic arch from nose to ears. Shamans used three horizontal rows of lines or dots on each cheek in the order red, black, red, and the same on arms and legs. At the Ghost Dance gatherings any person could and did use this pattern. [The use of white paint was not mentioned, and I failed to note its omission.]

SUBSISTENCE

Hunting

Bows and arrows.---The following information is from B.O. who was a noted hunter.

The plain bow (e·'dᵉ) was in common use by every man, and was the type first used by boys. It was made of pepperwood (no'j·bⁱ; California Laurel), and was of the same proportions and curvature as the sinew-backed bow. It was strung with a two-ply sinew cord.

The sinew-backed bow (ta'muedᵉ) was of juniper wood (wa·p) which only grew up in the mountains, i.e., from Waksachi territory eastward. The length was from 3 to 4 feet, and 2 inches the width at the center: roughly measured from the sternum to fingertips; if wanted extra long, from one shoulder to opposite fingertips. There was no indentation at the grip. The ends were recurved: heated over coals, the end would be braced into some crevice and forced to bend by leverage pressure on the center of the bow. This was a slow task requiring many repeated efforts. After the bow was shaped, sinew (ta'mobⁱ) from deer legs was soaked in water, then beaten between two flat stones. A heavy glue made by boiling deer horns was smeared along the back of the bow and the sinew laid into it. The sinew was so placed that a piece about one inch long extended beyond the bow at either end. When dry, these curled back, forming hooks for the better attachment of the bowstring. A hand grasp of leather was glued around the bow at the center; sometimes small feathers were inserted around the edges of this. The bowstring was 2-ply sinew cord. In fitting a new string, the looped loose end was placed first and the other end pulled up to the desired tension and tied permanently in position. Bows were left unstrung most of the time. To unstring, the tied end was placed against the right instep, the left hand grasping the upper end. The bow was then pulled inward and downward sufficiently to relax the string, which was slipped off with the right hand.

Y W 381 411

Not every man could make this kind of bow, but B.O. did not think that the art was confined to families. He stated that the Wobonuch made the best bows; the glue on theirs was clear, that on Waksachi bows murky.

Y W 411

For all types of shooting the bow was held in the left hand, with its left end about 30 degrees above horizontal. The left hand was so held that the joint of the third (middle) finger was slightly higher than that of the second (index) finger so that a groove or slight hollow was formed between the third finger and thumb[196] in which the arrow rode (fig. 10, h, Pt. I). Only one type of arrow grasp was used, that between the thumb and first bent joint of the second (index) finger (primary release); there was no hold on the string itself (fig. 10, i, Pt. I). Arrow butts were not thickened.

Four forms of arrow were distinguished: those for birds (pa·ga); for squirrels, rabbits, fox and other small game (pa·ga); for deer or vicious animals such as wildcat, cougar, and bear (u·'tipa·ga); and for war (gai·'wani). The first was of alderwood (napa·'apˢ) in a single piece. When scraped down with an obsidian blade, these were straightened by being heated over coals, bent and turned in the hands and over the knee. The self-points were ground down on stone and hardened by heating. The feathering was of three split feathers from a hawk wing. The butt was nocked.

For shooting birds a simple alderwood arrow was tipped with four small crosspieces tied on perpendicularly to the shaft (fig. 10, d, Pt. I); the butt was not feathered.

W Y [324] 413

The deer and war arrows were made of a single shaft of cane (ka'dk:d, Michahai; ha'ob¹, Waksachi), the former long, the latter short. Both had obsidian points. To shape a cane arrow a heated stone arrow straightener was used; the cane itself was not heated. The cane, cut to the desired length, was grasped at each end and pulled back and forth across the stone groove with a rolling motion. It was sighted down its length for straightness.

The tip end, which had been squared off, was wrapped with six turns of fine sinew cord about three inches from the end. Then the end was turned on a sharp wooden point to open up the partition in the cane, for it had been cut off just before a joint, (the boring process was called maraso'gomi o'o'homa, to-make-a-hole bone-drill). Into the hole thus made was

W Y [434]

inserted the flint point (fig 10, f, Pt. I). The points for deer arrows were nearly round in cross section and had a round stem. They were obtained in rough form from the Eastern Mono of Owens Valley and dressed locally. With this type of point no force other than wedging held it in place (fig. 10, g, Pt. I); it remained in the wound. Wood points were often substituted.

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[196] The thumb is regarded as the first finger herein.

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
[P. 2196] WESTERN MONO NS25

W Y 411

The butt end, already nocked, was now feathered. About 1-1/2 inches from the end the butt was wrapped with three turns of sinew cord, then on each of three ensuing turns the end of a feather was inserted. A final turn was taken around all three feathers and the end fastened by slipping it back under the last turn and pulling it up tight. The forward ends of the feathers were tied down in the same manner. The feathers were not spiraled but had an almost imperceptible turn; nor were they permitted to bow up from the shaft.

The war arrows were made in the same manner but were shorter and were tipped with a small obsidian blade. This was nearly flat in cross section and had a flanged butt. The tip of the shaft was treated as described above, but two splits were made into which the flanged butt was inserted. This was lashed in place with fine sinew and smeared with glue.

A composite arrow which was in popular use for small game was made by combining a cane shaft like that of the deer arrow with a wooden foreshaft of white oak shoots (pu·´jab[1]), the very hardest straight wood, according to B.O. He said spicewood [?][157] was the alternative if oak was unobtainable. Sometimes foreshafts were tipped with an obsidian point, but more often not. The foreshaft remained in the wound, while the main shaft fell off.

W Y 413

Arrow straightener.---The Wakɔachi form of arrow straightener (te´para·no, Wakɔachi; tu´padan, Michahai) was usually round or oval and had but one groove, according to B.O. His own was of that type. He had never seen one made; "they were just handed down." While B.O.'s generalization on shape may have been influenced by the aspect of his own, two "Mono" arrow straighteners pictured by Kroeber[158] are ovoid as opposed to the rather squared-off Yokuts type. (See also pl. 1, Pt. I, lower right foreground, and pl. 2, d herein.)

W Y 224

Traps.---A spring trap baited with acorn, which B.O. did not describe lucidly, was used for rabbits, jays, and squirrels. Quail were shot, not trapped. Ducks and geese were seldom seen in this mountain region.

Deer hunting.---Two methods were in use, that of a single hunter wearing the deer disguise, and that of several participants engaging in a communal drive. The former method was like that of the Yokuts. The second was so arranged that one or two accurate shooters hid themselves on known deer trails down which the animals were quietly driven by the other members of the party. Anyone who wished might join such a hunt, and all who did so were entitled to part of the spoils. B.O. said that in dividing the animals the shooters each received antlers, skin, and a rump, the choice

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[157] California Laurel?

[158] Handbook, pl. 49, a, b, c.

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

226 surface. The *t'unoi* net was fastened to a circular frame on a pole, held vertically, and raised. The more usual Californian net of this type is on a half hoop, and is used rather for scooping or horizontal lifting.

263 Salt may have been obtained at springs, but the reported cases are from the Pitkachi, whose "salt" stank; from the Chukchansi, who went to the plains to scrape a sort of alkali off the ground; and from the Yaudanchi, who, with other southern tribes, gathered a salty grass known as *alēt* and beat it on stones to extract the juice; which was particularly favored with green clover.

THE BOW.

411 Common bows for small game were little more than a shaped stick; good bows were carefully smoothed of large mountain cedar wood and sinew backed. The commonest type, primarily for the hunt, was nearly as long as a man, of about two fingers' width and the thickness of one. The ends were recurved, probably through a curling back of the thickened sinew. Bows made specifically for fighting were shorter, broader, and flatter, and pinched in the middle. Except for being unpainted and probably not quite so extreme in form, this type appears to have been the same as the northern California one.

Mention of the right and left end of the bow makes it seem to have been held horizontally, or at least diagonally, as by most California tribes.

The arrow, *shikid* generically, had three forms among the Yaudanchi, known as *t'uyosh*, *djibaku*, and *wuk'ud*. The war arrow had no foreshaft, but a rather long wooden point, notched. It measured from the finger tip nearly to the opposite shoulder or a trifle more than the possible pull of the bow. The Mohave also fought with arrows lacking flint tips. The ordinary hunting arrow had a long sharpened foreshaft, but no real head. The deer arrow had foreshaft and flint head, but the foreshaft was socketed without glue or tie, so that the main shaft would disengage after hitting.

413 The prevailing arrow straightener among the Yokuts is the southern California form: a well-shaped rectangular block of soft stone, often rounded or ridged on top, and invariably with a polished transverse groove. (Pl. 49, *a*.) This implement is undoubtedly associated with the employment of cane for arrows: the Yokuts are known to have used this plant, though not exclusively. The joints were warmed in the groove and bent by hand or on the ridge after the stone had been heated; the groove was also used for smoothing. The holed straightener of wood or horn for wooden shafts, as employed all over northern California, has not been reported from the Yokuts.

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

The sling was used only by boys, but the hill tribes report the Mono to have employed it in war. In the high Sierra it might often be more effective than an arrow.

BOATS.

Boats of bundled tule must have been in use among nearly all the valley tribes. On the tumbling streams in the hills these heavy rafts would have been utterly unmanageable. The northernmost Yokuts, below the Miwok of the hills, must have employed these craft constantly in their broad, sluggish streams and multitudinous still sloughs. They remained longest in service on Tulare Lake. Reconstructed models reveal only a cigar-shaped aggregation of bundles of rush, but the best specimens of old days may have approximated real boats in having raised edges. It can scarcely be presumed that the tule stalks could be bundled or beaten together so tight as to exclude the water; rather their lightness raised the whole mass so high that even the bottom of the hollow was above the water line, the gunwales serving only the convenience of preventing wave wash from entering and load or killed game from slipping overboard. Some of these lake boats carried three or four men in comfort, and could bear a small fire on an earth hearth. In maneuvering among the tules the entire vessel and occupants were often covered over with tules, forming a movable blind for the pursuit of waterfowl.

TEXTILES.

Yokuts baskets are distinguished by one special type, a coiled jar-like vessel with flat shoulder and constricted though sometimes reflaring neck. The pattern is one or more bands in red and black, either diamonds or hexagons or alternate trapezoids. The shoulder was often ornamented with a horizontally projecting fringe of quail crests (Pl. 50), for which red worsted is a modern substitute. These "Tulare bottlenecks," as they have come to be known in the curiosity and antique trade, as well as the quail plume decoration, are not found among the Miwok on one side of the Yokuts nor among the true southern Californians on the other. The two-color pattern is also rare if not lacking among the tribes to the north and south, except among the Chumash. The western Mono, Tübatulabal, Koso, Kawaiisu, and Kitanemuk worked according to Yokuts type, but as they form a fringe of Shoshoneans they have probably derived the art from their lowland neighbors. Kawaiisu technique is, however, as fine as Yokuts. The Chumash also did beautiful work, but the shapes which they gave to their incurved baskets are perhaps less specialized. At least they lack the sharp shoulder and distinct neck which the Yokuts fancied; but their baskets are very small-mouthed.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

as the Kaweah River and Tejon Canyon, back of present Tejon Ranchos Headquarters. TP6 574

YOWLUMNE BOWS AND ARROWS

The Yokuts Indians of the San Joaquin Valley had probably developed the science of hunting with the bow and arrow further than had most Indians. The Yowlumne, of Kern River, were foremost among the Yokuts in this work. At least three types of bows were made. The most common of these was a bow made of elderberry wood. On first thought it would seem that this material would be the most unsuited of any, but it makes an excellent bow. It can be secured in long, straight, clear staves and can be made into as heavy a bow as is wanted. It has a smooth, strong cast, which it does not lose for many years. 411 824

I once carelessly put a strung elder bow in a closet and did not discover it for more than a year. I unstrung it and stood it in a corner near my desk. In twenty minutes it was as straight as ever and had as good a cast as when it was first made. Elder-wood bows were easily made and were used exclusively in the San Joaquin Valley by boys for hunting all kinds of small game, and even by men for hunting antelope, deer, and elk. Strings for these bows were made of either hemp, sinew, or milkweed fiber. [283]

Good bows were made from native laurel, or bay wood. This tree grows in the Sierra in clumps of many small, straight trunks. It is easily split into staves, which are stronger for their size than those made of elder-wood.

Aged Yowlumne Indians state that the Frémontia of the Sierra can be used to make a complete hunting weapon—bow, string and arrows. They say that the bark can be stripped off and twisted into a good string. The large branches can be split into staves and the small, straight branches made into arrows. With a few primitive tools a disarmed Yowlumne in a few hours' time could manufacture a complete hunting weapon. [283]

The finest Yokuts bows were made of juniper and were backed with sinew. Juniper staves were traded from the Monache, or Piute to the east, or were secured in Yokuts territory in the upper Coast Range mountains. Bows of juniper were shorter than those made of other woods. They required more skill and labor to produce and were highly valued. [439]

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

411 Sinew-backed juniper bows were recurved at the tips and
237 carried a longer string than other bows of the same length.
The sinews for backing were taken from the loin of the deer
[381] in wide strips and were glued to the back of the bow with a glue
made from deer horns and hoofs. The bow was wider and flatter than the common bows and was narrowed in the middle for a hand grip. Strings for these bows were made of sinews from the loin of the deer.

411 Bow covers were often made of skin from the tails of
mountain lions. When such could not be had, any skin was
281 sewed into a bow cover. Quivers for holding arrows were often made of untanned antelope skin with the hair left on. When it could be secured, the Yokuts hunter liked the skin of a fox for a quiver. The entire skin was used. Even the skin of the head was used, the mouth and eye openings being sewed shut with sinews. The tail was left on the skin and the skin of the hind legs used for attaching a shoulder strap.

411 Yokuts arrows are the most refined and varied of all their hunting equipment. No less than seven kinds of arrows were commonly used by Yokuts hunters. All but two of these were made of two pieces, or with a fore-shaft. Aged Yowlumne Yokuts have stated that once they used only a one-piece arrow like those used by their neighbors to the east. These were tipped with an obsidian, or volcanic glass point, or with a similar point made of jasper, chalcedony, or some other stone which chipped easily. Another one-piece arrow was made by children and by men for use in a game, or to shoot small animals like gophers, mice and rats at short range. They were feathered, but had no stone point. The end of this arrow shaft was pointed and hardened in the fire.

There are several important reasons why a two-piece arrow was used by the Yokuts. First of these is the fact that it was very difficult to find or to make straight a one-piece arrow shaft as long as was used by Yokuts hunters. A second reason for using a two-piece arrow was that when game was missed, the stone point was almost always damaged. This made useless a valuable shaft until it could be taken to camp and repointed. The importance of this can be understood when it is known that a Yokuts hunter generally carried fewer than a half dozen arrow shafts. As many as two dozen fore-shafts were carried in a bag attached to the gee string.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

The great variety of San Joaquin Valley game also made useful the two-piece arrow. With only a few good arrow shafts, a Yokuts could quickly attach a point to shoot squirrels, birds, ducks or any kind of game he saw. There was another very important reason for using the two-piece arrow, especially in hunting large game, such as antelope, deer, elk, raccoon, wild cat, fox, and mountain lion. Raccoon, wild cat and mountain lion would fight the arrow with their paws. They would break the arrow off, generally inside their bodies. Antelope, elk and deer would do the same by rubbing against brush, trees, rocks, or tules. Then the wound closed and much of the bleeding stopped.

It was not often possible for a Yokuts hunter to kill large game outright with a bow and arrow. The Yowlumne found it necessary to follow antelope and deer for several hours, and sometimes days, before they became helpless from bleeding. So it was important to continue the initial bleeding as long as possible. When a wild cat or lion clawed at a foreshafted arrow the long mainshaft immediately fell free, leaving the foreshaft projecting from the wound. The Indian picked up the dislodged mainshaft, replaced the point, and followed the wounded animal.

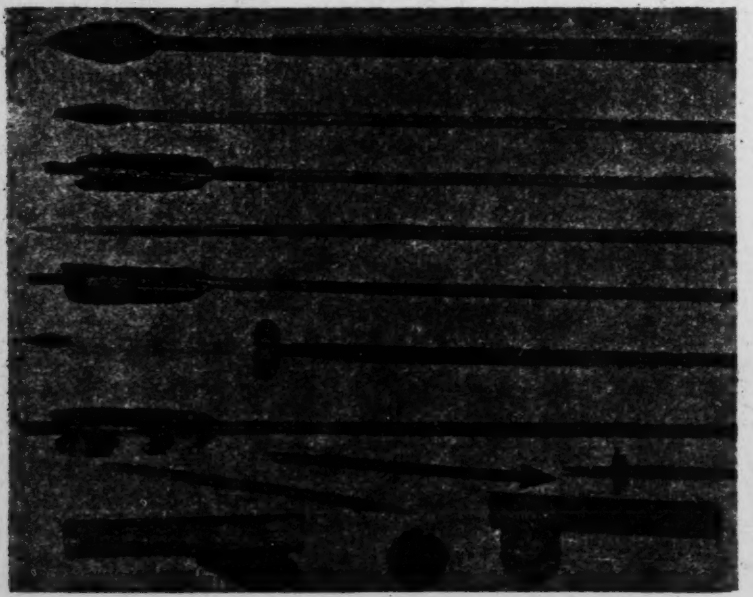
The foreshaft was made of the toughest wood the Indians could secure, generally live oak, chamise, or wild lilac (ceanothus). It could not be broken easily and the barbs of the arrow prevented its being removed by clawing, or by being rubbed against brush, trees, rocks or tules. But the constant effort to remove it by these means stimulated the flow of blood and hastened the collapse of the injured animal.

The sinews attaching points to game foreshafts were water-proofed by a coating of asphaltum. Otherwise the blood would soon soften the sinews, allowing the point to become detached and the foreshaft to be drawn from the wound.

The sinews attaching points to war arrows were not water-proofed. An Indian was more intelligent than the wounded animal. He could twist the foreshaft about and remove it, together with the stone point. For this reason the stone points on war foreshafts were attached as loosely as possible and the sinews were not waterproofed. As soon as they were wet with blood the sinews loosened and allowed the point to remain in the wound when the foreshaft was removed.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

411



ARROWS AND TOOLS

Top shows a fore-shafted javelin. Second from top is a one-piece arrow. Third, fifth and seventh from top shop the use of red-tailed hawk feathers. Fourth from the top shows a wooden foreshaft. Sixth from the top shows the skip-bomb arrow. Eighth from the top shows, left to right, foreshafts used for squirrels, war and birds.

Bottom, left and right, shows chipped stone knives set in wooden handles by means of asphaltum. Center is a skip-bomb roll of tule for use on the javelin shown at the top.

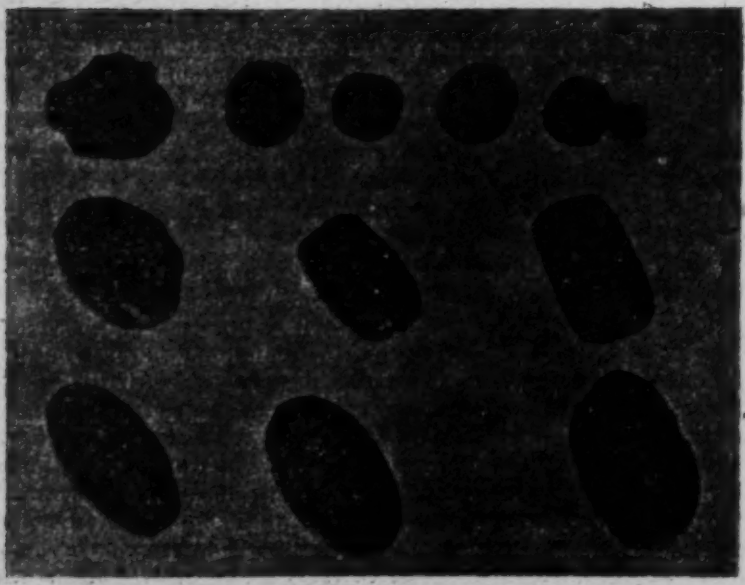
All of the above were made by **Wahumchah**, last surviving man from the **Yowlumne** tribe.

411 223 Bird fore-shafts had a sharp wooden point with two crossed pairs of small sticks attached to it by sinews about an inch and a half from the point. Yokuts claim that this point would not glance off the feathers of the bird, but would pull many of them out, tearing the skin, and badly bruising the body. This point also often broke the wing of a bird when an ordinary arrow would not.

411 224 Squirrels were shot with a wooden pointed foreshaft having a barb attached to it about two inches from the point. The projecting foreshaft prevented the squirrel from crawling

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

411
224
[412]



Yokuts arrow straighteners and the tools with which they were made. These were all unearthed for the author by Ichow, an aged Wukchumne. He had seen his grandfather bury them about 1865. "During the white man's big war," said Ichow.
At the top left is a sharp fragment of hard blue stone used to peck the articles to shape and to the right are four more which through use have been reduced to hammer stones. At the left, center row, is a stone which shows hammer-stone marks and which was discarded because it contained a flaw. To the right is another which broke while being made. The other four show varieties of construction. The completed arrow straightener was heated in the fire and used to harden and straighten the cane arrow shafts. Buttonwillow and gooseberry shafts were most often dried and hardened over an open fire.

down a hole and the barb prevented the foreshaft from slipping from the wound.

A most ingenious device was used on ordinary waterproofed stone-pointed foreshafts for shooting ducks when they were resting on water. An ordinary arrow dives or is stopped almost as soon as it touches the water. To prevent this the Yokuts slipped a small roll of tules on the foreshaft. This lodged against the ferrule on the end of the main shaft. When the arrow struck the water the roll of tules prevented its diving and allowed it to skip forward on top of the water. It was the original skip-bomb weapon.

411
223

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

411 Arrows were commonly fletched with feathers from the tail of the red-tailed hawk. Feathers from the wings of this 237 hawk were also used. When red-tailed hawk feathers could not be secured, tail and wing feathers were used from the other native hawks, and sometimes from the great horned owl. Feathers were fastened to the mainshaft by means of sinews [823] which were commonly waterproofed with asphaltum. Feathers were trimmed to shape with the glowing edge of a fired piece of sycamore bark.

411 Yowlumne Indians state that the best arrow shafts were made from long, straight shoots of spiny gooseberry. These 824 were very strong and, when once straightened, remained straight. But most arrow shafts were made of the heartwood of buttonwillow, which was also very strong. After it had been straightened and hardened by being seasoned over a fire, or on a heated soapstone arrow straightener, it also retained its shape very well. The native cane or bamboo was also used for making arrow shafts. These were straightened on the heated [258] soapstone arrow straightner. The Yowlumne also harvested a crude sugar from the leaves of this same cane in much the same way that salt was harvested from the leaves of salt grass.

411 Spears were also commonly used by the Yokuts. For some [224] kinds of hunting they were used almost entirely. Raccoons and bears were most often killed with spears. There were two kinds of spears. One, to be held in the hands and used for repeated thrusts, was short and heavy and was made of one piece of elderwood.

[824] A second type of spear was actually a primitive javelin. The shaft was also made of elderwood, was tapered smaller toward the rear, and was from five to six feet long. Javelins were foreshafted like the two-piece arrows, but used a much larger stone point, some as long as four inches. As all spears [823] might be used in the water (but never to spear fish) all sinews were waterproofed with asphaltum.

A roll of tules was also fitted to the foreshaft of the javelin when it was thrown at raccoon, beaver, or otter in the water. This converted it into a skip-bomb weapon.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

My mother found almost all of her relations there at Chawlowin. Her brother had his family there and two or three of her uncles were there, too. They had all come back to that camp from Tule River Reservation, where the soldiers had taken them from Tejon Ranch. They wanted to stay at their old home. These people did not go back to the old village at the mouth of Deer Creek and White River because they were afraid the soldiers would come back and get them. They were hid in the tules in *tumlus* (toom'-loos) houses at the north side of the Island.

In a few days my stepfather's brother came to the camp. He had left his team and wagon on the land east of Chawlowin where he could look after them once in a while.

The tumlus house was a quick house to make. They cut it in the green tules. We lived in one of these houses about three months, until it was too cold to stay any longer. They were good houses when the north wind did not blow. Then we used to wake up with water in our beds. We would have to go to the higher ground until the water went back. The water in the lake got lower all of the time, so when we left Chawlowin it did not come in the tumlus houses any more.

We could not get anything to eat but meat and fish and tule roots at Chawlowin. We had lots of fish. Some of the men caught ducks in a string net on the end of a pole. That was hard to do. They did it when the north wind was blowing. Then the ducks flew very slow against the wind, close to the tops of the tules. The hunter sat on a wooden seat almost at the top of the tules.. He had tules tied around him so that the ducks could not see him. Once my mother's brother caught a duck in his hands that way.

They caught ducks in the water with strings, too, but I do not know how they did it. I saw them take the ducks out of the strings, but I never saw them put the strings there. The men always did that.

Once in a while the men killed an elk at Chawlowin. There were more there than on the land outside the lake in those days. They shot the elk with bow and stone pointed *kots* [obsidian] arrows. The arrows had a short loose wood point.

When they shot the elk it ran and rubbed against the tules to pull the arrow out. The back part fell out, but the front end stayed in. The hunters followed the elk. After awhile the elk was so sick they could catch him and kill him. I heard of the

7:Powers J-5 (1871-1876) 1877 NS29 Yokuts NS29

liberally of their substance. But he was yet an unknown prophet. They were incredulous, and mostly laughed him to scorn, whereupon he would leave the village in high dudgeon, denouncing war upon their heads, and threatening them with a continuance of the drought another year far worse than before. Sure enough, the enraged Hopodno brought drought a second year, and the Indians were smitten with remorse and terror, believing him endowed with superhuman power; and when next year he made a second pilgrimage, offerings were showered upon him in abundance, and men heard him with trembling. He compelled them to pay him fifty cents apiece, American money, and many gladly gave much more. And he made rain.

As to their implements and weapons, there are some interesting particulars to be noted. Here, as everywhere on the Sacramento and Joaquin plains, the Indians make no bows, but purchase them all from the mountaineers. This is because they have no cedar. This wood is extremely brittle when dry, and is then the poorest possible material for bows; but by anointing it every day with deer's marrow while it is drying the Indian overcomes this quality and renders it the best. The bow is taken from the white or sap wood, the outside of the tree being also the outside of the bow. It is scraped and polished down with wonderful painstaking, so that it may bend evenly, and the ends are generally carved so as to point back slightly. Then the Indian takes a quantity of deer's sinew, splits it up with flint into small fibers, and glues them on the outside or flat back of the weapon until it becomes semi-cylindrical in shape. These strings of sinew, being lapped around the end of the bow and doubled back a little way, impart to it its wonderful strength and elasticity. The glue is made by boiling the joints of various animals and combining the product with pitch.

I saw a bow thus carefully made in the hands of an aged chief, and it was truly a magnificent weapon. It was about five feet long, smooth and shining—for when it becomes a little soiled the fastidious savage scrapes it slightly with flint, then anoints it afresh with marrow—and of such great strength that it would require a giant to bend it in battle. For lack of skins the owner carried it in a calico case. The string, composed of twisted sinew, was probably equal in strength to a sea-grass rope of three times its diameter.

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411 diameter. When not used the bow was unstrung, and the string tied around the left limb of the bow, and to prevent the slightest lesion of either the bow or the string the former had a section of fur from some animal's tail, about four inches long, slipped on to it.

Of arrows, the Indians living on the plains made some for themselves out of button-willow, straight twigs of the buckeye, and canes, but the most durable came from the mountains. There are two kinds, war-arrows and game-arrows; the former furnished with flint-heads, the latter not. The shaft of the war-arrow consists of a single piece, but that of the game-arrow is frequently composed of three pieces, furnished with sockets so adjusted as to fit into each other snugly. When the hunter, lurking behind the covert, sees the quarry approaching, he measures quickly with his eye the [224] probable length of the shot he will have to make, and if it is a long one he couches his arrow with three pieces; but if a short one, with extraordinary quickness he twitches it apart, takes out the middle section, claps the two end sections together again, and fires. An arrow made of what we should pronounce the frailest of all woods, the tender shoot of a buckeye, and pointed with flint, has carried death to many a savage in battle. I have seen an Indian couch a game-arrow, which was pointed only with a section of arrow-wood, and drive it a full half-inch into the hardest oak! An old hunter says he has seen an Indian stand a hundred paces distant from a hare, slowly raise his long, polished bow, shoot a quick glance along the arrow, then send it whizzing through both his enormous ears, pinning him fast to a tree behind him.

324 411 Some mention was made in Chapter XI of the manner in which flint arrow-heads are made. Mr. E. G. Waite, in a communication to the *Overland Monthly*, gives the following description of the method employed both in Central California and among the Klamaths, as he witnessed it in an early day:

"The rock of flint or obsidian, esteemed by the natives for arrow-pointing, is broken into flat pieces, after the manner usually described. When the pieces have reached a proper size for arrow-heads the mode of finishing it is in this wise: The palm of the left hand is covered with buck-skin held in its place by the thumb being thrust through a hole in it. The

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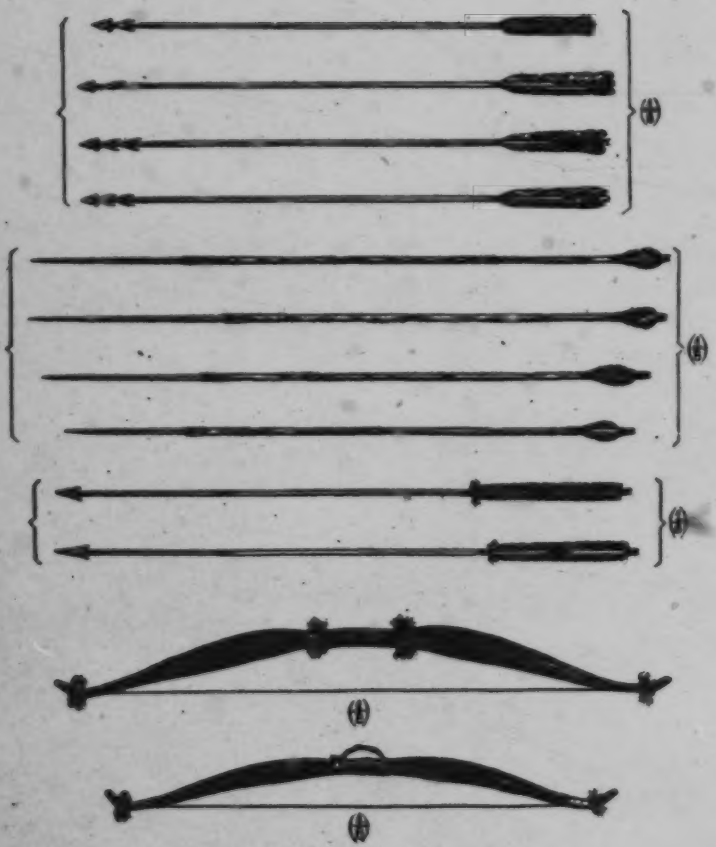

Figure 60.—Bows and Arrows.

[facing p. 374].

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inchoate arrow-head is laid on this pad along the thick of the thumb, the points of the fingers pressing it firmly down. The instrument used to shape the stone is the end of a deer's antler, from four to six inches in length, held in the right hand. The small round point of this is judiciously pressed upon the edge of the stone, cleaving it away underward in small scales. The buckskin, of course, is to prevent the flesh from being wounded by the sharp scales. The arrow-head is frequently turned around and over to cleave away as much from one side as the other, and to give it the desired size and shape. It is a work of no little care and skill to make even so rude an instrument as an arrow-head seems to be, only the most expert being very successful at the business. Old men are usually seen at this employment."

Mr. B. P. Avery, in an article entitled "Chips from an Indian Workshop", published in the same magazine, gives a very pleasant account of a visit made by him, near the summit of the Sierra, to what had evidently been the spots selected by the aborigines for the manufacture of these arrow-heads. They were generally so chosen as to show that the Indians had an eye for the picturesque and the romantic, on bold, overlooking promontories, commanding prospects far and wide down the mountain slope and over the plains; and the brilliant-colored chips of obsidian, jasper, chert, cornelian, and other flints, lying in piles, completed a very pleasing picture.

Most California Indians go now, and always have gone, barefoot; but some few were industrious enough to make for themselves moccasins of a very rude sort, more properly sandals. Their method of tanning was by means of brain-water. They dried the brains of deer and other animals, reduced it to powder, put the powder into water, and soaked the skins therein—a process which answered tolerably well. The graining was done with flints. Elk-hide, being very thick, make the best sandals.

The usual shell-money is used among them, and a string of it reaching from the point of the middle finger to the elbow is valued at 25 cents. A section of bone, very white and polished, about two and a half inches long, is sometimes strung on the string, and rates at 12½ cents. They uniformly undervalue articles bought from the Americans; for